IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Miriam G. Blatt et al.

32615
PATENT TRADEMARK OFFICE

Application No.: 10/010,238

Confirmation No.: 5843

Filed: December 7, 2001

Art Unit: 2121

For: DATA ANALYSIS TECHNIQUES FOR
      DYNAMIC POWER SIMULATION OF A CPU

Examiner: T. H. Stevens

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

New Matter under 35 U.S.C. 132(a)

The Examiner states that the amendment to the Specification filed on March 20, 2007, explicitly defining the acronym "SCD," is objected to because it introduced new matter into the disclosure. Applicants respectfully assert that Applicant is permitted to write the Specification to the level of one skilled in the art. The MPEP § 608.01 states:

> "The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to _enable any person skilled in the art or science to which the invention or discovery appertains_, or with which it is most nearly connected, to make and use the same." [emphasis added].

In this case, one skilled in the art would clearly know and understand that the meaning of the acronym "SCD," especially when read in the context of the Specification. Therefore, Applicant asserts that is it unnecessary to define the acronym in the specification. Moreover, even assuming, _arguendo_, that the full form and meaning of the acronym "SCD" is required, Applicant asserts that the full name of the acronym "SCD" added to the Instant Specification in the response filed on March 20, 2007, does not constitute new matter.

Applicant respectfully notes that the present application relates to power modeling methodologies for a microprocessor. The detailed description introduces an embodiment that includes three types of summary information: single-cycle summary data, multi-cycle power (MCP) and multi-cycle derivative (MCD) (*see* Specification, paragraph [0016]). Further, in Figure 3 of the Instant Specification, the single-cycle summary data (50) is shown as containing peak and low single cycle power and the peak single-cycle derivative. Thus, the acronym "MCD" is clearly defined in the specification as "Multi-Cycle Derivative," and it logically follows, in the context of this Specification, that the acronym SCD stands for "Single-Cycle Derivative." In fact, in paragraph [0019] of the Specification, in which MCD is defined as "a group of single cycle power values that progress in one direction," an example is presented in which a SCD/MCD ratio is compared to a threshold value. In the example, the numerator is said to the be the absolute value of the SCD and the denominator is said to be the current MCD value, which is obtained from the difference between a start value and an end value in the MCD. The Specification states that this "scheme is derived as an extension of the single cycle summary data (50) and the MCD (54) scheme." Figure 3 of the current Specification clearly shows that single cycle summary data (50) includes a single cycle derivative. Thus, it is clear that SCD and MCD are mathematically and conceptually related and, therefore, one of ordinary skill in the art would readily understand the full form of the acronym "SCD" as single-cycle derivative, given the complete definition of "MCD" as multi-cycle derivative.

As further evidence, the acronym "SCD" is used throughout the specification in conjunction with MCD as in "SCD/MCD." Therefore, one skilled in the art would clearly understand that "SCD" is the single-cycle derivative and "MCD" is a multi-cycle derivative. Moreover, to remove any ambiguity as to this point, Applicant has amended the Specification to explicitly recite "As one skilled in the art will readily appreciate, as used herein, SCD means single-cycle derivative." Therefore, Applicant respectfully asserts that the specification was originally written to the level of one skilled in the art and would readily be understood by one skilled in the art. Additionally, the Specification has been amended solely to explicitly state that which would have been understood originally by one skilled in the art and, thus, no new matter has been added by way of the amendments made to the Specification. Accordingly, reversal of this objection is respectfully requested.

Rejections under 35 U.S.C. § 112

Claims 1-3, 5-8, 10, 11, and 14-16 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner states that the limitation reciting "wherein a derivative value is a difference between two particular associated power values in the simulation," is not disclosed in the original specification. Applicant respectfully disagrees. The aforementioned limitation is explicitly supported in the Specification in the last line of paragraph [0017], which states "The derivative is defined as the difference between two particular associated power values in the simulation." Applicant respectfully points out that the aforementioned definition of a derivative value was explicitly recited in the Detailed Description portion of the Specification as originally filed and is, therefore, a proper part of the specification that supports the claim limitation. Thus, written description for the claim limitation is present from the originally filed Specification. Accordingly, reversal of this rejection is respectfully requested.

Claims 14-16 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, claims 14-16 stand rejected because the acronym "SCD" is undefined in the original specification. Applicant respectfully asserts that, as stated above, (a) the acronym "SCD" would have been readily understood by one of ordinary skill in the art, and (b) in the amendment filed on March 20, 2007, Applicant amended the specification to explicitly include the full form of the acronym "SCD," as it would have been originally understood. As explained above, the aforementioned amendment does not constitute new matter and therefore should be entered by the Examiner. Thus, the acronym "SCD" was originally and is now clearly defined in the specification. Accordingly, reversal of this rejection is respectfully requested.

Rejections under 35 U.S.C. 102(b)

Legal Standard for Establishing Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). (*See* MPEP § 2131).

Arguments

　　　　Claims 1-3, 5-8, 10, 11, and 14-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by "Effects of Delay Models on Peak Power Estimation of VLSI Sequential Circuits" by Hsiao, IEEE 1997 ("Hsiao"). Hsiao fails to disclose all of the claimed limitations in the pending claims.

A. Hsiao Fails to Disclose Reporting Summary Data that Includes Peak or Average Power Values Calculated using Single-Cycle or Multi-Cycle *Derivative Power Values*.

　　　　Independent claims 1, 5, and 10 of the present invention recite "wherein the summary data includes at least one type of data selected from single-cycle summary data configured to report a peak single cycle derivative power value, wherein a derivative power value is a difference between two particular associated power values in the simulation, multi-cycle summary data configured to report a peak average power value over multiple cycles, and multi-cycle derivative data configured to report a peak derivative power value over multiple cycles."

　　　　Specifically, the Examiner asserts that (i) a peak single cycle derivative is not defined in the present Specification; and (ii) the Office interprets "single cycle derivative" as finding power under different or derived delay assumptions" (*see* Office Action mailed June 5, 2007, page 4). This is incorrect. As recited by independent claims 1, 5, and 10, a derivative power value is a power value obtained by taking the *difference* between two associated power values *obtained from the simulation*. Thus, a single-cycle derivative power value is a value obtained by taking the difference between two associated power values obtained from the simulation of a single cycle (*see* Specification, paragraph [0017], which clearly defines "single cycle derivative"). Further, a peak single cycle derivative value is simply the highest single cycle derivative value. Similarly, multi-cycle derivative data is power data obtained by taking the difference between two power values over multiple cycles (*see* Specification, paragraph [0019]).

　　　　With respect to (ii) above, derivative power values, as explicitly defined in the present Specification, are distinct from power values measured under different delay assumptions. The cited portion of Hsiao discloses "the estimate for peak power dissipation can be used as a lower-bound for worst-case power dissipation in the circuit in any given time frame. Our goal in this work is to find and compare such bounds for the peak power dissipation of a circuit under different delay assumptions" (*see* Hsiao, page 46, right column, the last two lines of the second

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paragraph). In contrast, as described above, derivative power values in the claimed invention are obtained by computing a difference between two power values obtained from simulation data.

In fact, in the context of the Specification, both single-cycle derivative and "SCD" are defined in this way. Specifically, "SCD" is defined as being calculated by subtracting the previous value from the current value (see Specification, paragraph [0023]). Thus, even if the Examiner's assertion that the acronym "SCD" does not mean "single-cycle derivative" is assumed, *arguendo*, to be appropriate, "SCD" must be interpreted as it is clearly set forth in the Specification, and not in the way the Examiner suggests. Applicant respectfully notes that the fact that both single cycle derivative and "SCD" were defined as being calculated in the same way further supports that these terms would be readily understood as equivalent.

In view of the above, it is clear that the derivative power values recited in the amended independent claims of the present invention have *nothing to do with delay assumptions*. Obtaining various delay assumptions (*i.e.*, assumptions related to latency) does not explicitly require taking a numerical *difference* (*i.e.*, performing a subtraction), as required by the independent claims. Thus, based on the only appropriate meaning of the claim terms, it is clear that Hsiao is completely silent with respect to single-cycle or multi-cycle derivative values. Moreover, Hsiao fails to disclose that the delay assumptions are *obtained from a simulation*.

   B. The Examiner Has Clearly Failed to satisfy the Requirements Set Forth in MPEP § 2131.

In view of the above, the Examiner has clearly failed to satisfy the requirements set forth in MPEP § 2131 with respect to the pending claims. Accordingly, a favorable decision from the panel is respectfully requested.

Dated: September 4, 2007   Respectfully submitted,

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